

Docket No.: MRE -0008

Corres. and Mail

BOX AF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Ji Hyun HWANG et al.

Serial No. 09/777,689

Confirm. No.: 3330

Filed: February 7, 2001

For: APPARATUS AND METHOD FOR CONTROLLING COOLING OF GANTRY HAVING LINEAR MOTOR

: EXPEDITED PROCEDURE
: UNDER 37 C.F.R. §1.116

: Group Art Unit: 2834

: Examiner: J. Jones

PATENT



BOX AF

ASSISTANT COMMISSIONER FOR PATENTS
Washington, D. C. 20231

Dear Sir:

Transmitted herewith is an Amendment and/or Reply in the above identified application.

☒ No additional fee is required.

☐ Also attached:

The fee has been calculated as shown below:

	NO. OF CLAIMS	HIGHEST PREVIOUSLY PAID FOR	EXTRA CLAIMS	RATE	FEE
Total Claims	28	28	0	x \$18 =	0
Independent Claims	6	6	0	x \$84 =	0
If multiple claims newly presented, add \$280.00					
Fee for extension of time					
TOTAL FEE DUE					0

☐ Please charge my Deposit Account No. 16-0607 in the amount of \$. An additional copy of this transmittal sheet is submitted herewith.

☐ A check in the amount of \$ _____ (Check # _____) is attached.

☒ The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment, to Deposit Account No. 16-0607, including any filing fees under 37 C.F.R. 1.16 for presentation of extra claims and any patent application processing fees under 37 C.F.R. 1.17.

Respectfully submitted,
FLESHNER & KIM, LLP

John C. Eisenhart
Registration No. 38,128
Randall H. Cherry
Registration No. 51,556

P.O. Box 221200
Chantilly, VA 20153-1200
(703) 502-9440 JCE/RHC:jgm
Date: November 21, 2002

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9/Response
(10/25/02)
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REQUEST FOR RECONSIDERATION

BOX AF

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

In reply to the Final Office Action dated August 22, 2002, reconsideration of the rejections set forth therein is requested as follows:

Claims 1-28 are pending in this application.

I. Allowable Claims

The Examiner is thanked for the indication that claims 1-6 are allowed, and that claims 19-22, 26 and 27 contain allowable subject matter. However, for at least the reasons set forth below, Applicants submit that all pending claims are in condition for allowance.

Approved for Entry

II. Belsterling et al and Holden

The Office Action rejects claims 7, 14 and 23 under 35 U.S.C. § 103(a) over U.S. Patent No. 4,536,690 to Belsterling et al (hereinafter “Belsterling”) in view of U.S. Patent No. 6,324,858 to Holden (hereinafter “Holden”). This rejection is respectfully traversed.

Applicants respectfully submit that Belsterling is directed to a self-propelled robotic platform driven by magnetic coils, where the magnetic flux of the coils link the platform with an underlying, preferably conductive, supporting surface. Referring to Figure 3 of Belsterling, a platform frame 24 is shown with casters 26 located in the corners of the platform frame 24. The platform frame 24 has four sets of coils 20, 21, 22 and 23 consisting of multiple fixed coils which are configured to magnetically couple to the supporting surface upon which the platform frame 24 is placed. The sets of coils 20, 21, 22 and 23 drive the platform frame 24 across the supporting surface by sweeping magnetic fields across the supporting surface. Thus, the sets of coils operate as a first half of a linear motor, and the supporting surface acts as a corresponding second half of a linear motor to drive the platform in any chosen direction. Furthermore, when the supporting surface is made from an appropriate material, the Belsterling platform can be magnetically attracted to the supporting surface.

The platform frame 24 is configured to hold various tools such as polishing or scraping tools, pincher arms, welders, and painting tools. Such tools are configured to do work on the supporting surface while the platform frame 24 either moves across the supporting surface, or is locked in place on the supporting surface. Accordingly, the self-propelled robotic platform

can automatically perform work such as welding or painting over large surface areas in virtually any position, or even underwater as shown in Figure 11.

Applicants respectfully submit that Holden is directed to a self-cooling rotary motor. Referring to Figure 1 of Holden, a rotary motor 14 drives a refrigeration compressor 12. The refrigeration compressor 12 pumps refrigerant in a loop between an evaporator 20, an expansion device 32 and a condenser 22. The rotary motor 14 is connected to the loop proximate to the expansion device 32 through a branch refrigerant line 24 and line 24-1. A flow of refrigerant through the branch refrigerant line 24 and line 24-1 to the rotary motor 14 is controlled by solenoid valve 34.

A microprocessor 10 receives a power consumption signal from a power transducer 14-1 and a temperature signal from temperature sensor 14-2 on the rotary motor 14. Based on the signals, the microprocessor 10 can actuate solenoid valve 34 to control the amount of refrigerant flowing to the rotary motor 14.

A. Belsterling and Holden Fail to Show the Claimed Invention

Applicant notes that independent claim 7 sets forth a cooling system for a gantry, and independent claim 23 sets forth a method of cooling a gantry. Applicants submit that in the context of this application, a “gantry” is a positioning system having an x-frame and a y-frame configured to move a tool above a work surface. Each frame of the gantry is limited to motion

along a single axis. Thus, each frame must work in cooperation with the other to move the tool in a combination of x and y directions to position the tool above a work surface.

In contrast, Belsterling shows an un-cooled platform on wheels, and Holden shows a self-cooling rotary motor. Since no gantry is shown in either reference, their combination cannot show a gantry, let alone a system or method for cooling a gantry. Accordingly, Applicants respectfully submit that Belsterling or Holden, either alone or in combination, do not disclose or suggest cooling a gantry as set forth in independent claim 7, or a method of cooling a gantry as set forth in 23. For at least these reasons, independent claims 7 and 23 are allowable over the combination of Belsterling and Holden.

Claim 14 depends from claim 7 and is allowable for at least the same reasons.

B. The Combination of Belsterling and Holden is Improper

Applicants note that the cooling system of Holden depends on the compressor of Holden, which must be driven by a rotary motor. Belsterling uses magnetic coils to propel itself. The cooling system of Holden cannot be driven by the magnetic coils of Belsterling, and Belsterling lacks any device which could be used in drive a cooling system compressor. It is respectfully submitted that it would be impossible to import the Holden cooling system into the Belsterling self-propelled platform. For at least this reason, it is respectfully submitted that the combination is improper and should be withdrawn.

Second, Applicants note that the robotic platform of Belsterling is designed to move slowly, or not at all over the supporting surface. Thus, very little heat would be generated by the coils, and cooling the platform or supporting surface would be unnecessary. Accordingly, one of skill in the art would have no motivation to add a cooling system to the robotic platform of Belsterling. Any such combination would necessarily be based on the impermissible use of hindsight in view of Applicants' own invention. For this additional reason, it is respectfully submitted that the combination is improper.

For all the above reasons, it is respectfully submitted that the combination of Belsterling and Holden is improper. Accordingly, withdrawal of the rejection of claims 7, 14 and 23 is respectfully requested.

III. Belsterling, Holden and Vollenwyder et al

The Office Action rejects claims 8 and 24 under 35 U.S.C. § 103(a) over Belsterling in view of Holden and further in view of U.S. Patent No. 5,258,671 to Vollenwyder et al (hereinafter "Vollenwyder"). This rejection is respectfully traversed.

Dependent claims 8 and 24 are allowable for at least the reasons discussed above with respect to independent claims 7 and 23, from which they respectively depend, as well as for their added features. Accordingly, the rejection of claims 8 and 24 should be withdrawn.

IV. Belsterling, Holden and Hartzell, Jr.

The Office Action rejects claim 9 under 35 U.S.C. § 103(a) over Belsterling in view of Holden and further in view of U.S. Patent No. 5,834,862 to Hartzell, Jr. (hereinafter “Hartzell”). This rejection is respectfully traversed.

Dependent claim 9 is allowable for at least the reasons discussed above with respect to independent claim 7, from which it depends, as well as for its added features. Accordingly, the rejection of claim 9 should be withdrawn.

V. Belsterling, Holden and Emshoff et al

The Office Action rejects claims 10, 12 and 13 under 35 U.S.C. § 103(a) over Belsterling in view of Holden and further in view of U.S. Patent No. 5,701,044 to Emshoff et al (hereinafter “Emshoff”). This rejection is respectfully traversed.

Dependent claims 10, 12 and 13 are allowable for at least the reasons discussed above with respect to independent claim 7, from which they depend, as well as for their added features. Accordingly, this rejection should be withdrawn.

VI. Belsterling, Holden and Straley

The Office Action rejects claims 11 under 35 U.S.C. § 103(a) over Belsterling in view of Holden and further in view of U.S. Patent No. 6,329,732 to Straley. This rejection is respectfully traversed.

Dependent claim 11 is allowable at least for the reasons discussed above with respect to independent claim 7, from which it depends, as well as for its added features. Accordingly, the rejection of claim 11 should be withdrawn.

VII. Belsterling, Holden and Leuthen

The Office Action rejects claims 15, 17, 18 and 28 under 35 U.S.C. § 103(a) over Belsterling in view of Holden and further in view of U.S. Patent No. 4, 542, 3242 to Leuthen. This rejection is respectfully traversed

Dependent claims 15, 17 and 18, and 28 are allowable at least for the reasons discussed above with respect to independent claims 7 and 23, from which they respectively depend, as well as for their added features. Accordingly, the rejection of claims 15, 17, 18 and 28 should be withdrawn.

VIII. Belsterling, Holden and Yabu

The Office Action rejects claims 16 and 25 under 35 U.S.C. § 103(a) over Belsterling in view of Holden and further in view of U.S. Patent No. 4,907,021 to Yabu. This rejection is respectfully traversed.

Dependent claims 16 and 25 are allowable at least for the reasons discussed above with respect to independent claims 7 and 23, from which they respectively depend, as well as for their added features. Accordingly, the rejection of claims 16 and 25 should be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Randall H. Cherry**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



John C. Eisenhart
Registration No. 38,128
Randall H. Cherry
Registration No. 51,556

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703 502-9440 JCE/RHC:jgm
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